

AMENDMENT TO THE SPECIFICATION ONLY TO PARA 45 AND PARA 71:

Please replace Paragraph 45 with the following:

[Para 45] The PIC is also the basic building block for a number of modules and systems that are essential parts of fiberoptic based communication and computing. The dense wavelength division multiplexing and demultiplexing (DWDM and DWDD) are the most basic applications. ~~The~~ In DWDM and DWDD, these chips function as the heart of the system by performing multiplexing (MUX) and demultiplexing (DMUX). In addition, used as a “building block,” a number of systems and modules can be built around these chips by integrating over multiple tiers such as triple-phase integration briefly described below ~~¶[see TUS~~ [See in US pat. application No. 2004-0105610 A1 (June 3, 2004) titled “Reflective Arrayed Waveguide Grating”].

Please replace Paragraph 71 with the following:

[Para 71] Referring to Fig. 7, the layer 120 is patterned by a dry etching process such as reactive ion etching (RIE) to form sharp walled ridges that forms the waveguide core 125[.] with an air gap 127 resulting between each pair of waveguide cores 125, where the refractive index of air is 1.0. Prior to etching a mask 126 is laid on the dendrimer layer 120. The mask is pre-written with the desired patterns and common photolithography with photo-resist steps is followed to develop the patterns on the film. Common mask aligner and stripping method can be used prior to reactive ion etching. Several cores are shown in Fig. 7 (5 instances), each core forming independent waveguides after cladding layers are deposited. However, any number of cores can be formed depending on application. For instance, for an eight channel RAWG, as many as 37-47 waveguides may be necessary (depending on a given design). Even higher number of waveguides is necessary for higher channel count devices.